

## Contents of Volume 156

Abarza S → Altenburger R  
Ackermann HW → Kauri T  
Ackersberg F, Bak F, Widdel F  
Anaerobic oxidation of saturated hydrocarbons to CO<sub>2</sub> by a new type of sulfate-reducing bacterium 5  
Akimoto K → Shimizu S  
Albeek G-JWM van, Klaassen C.  
Keltjens JT, Drift C van der, Vogels GD  
ATP synthesis from 2,3-diphosphoglycerate by cell-free extract of *Methanobacterium thermoautotrophicum* (strain ΔH) 491  
Altenburger R, Abarza S, Callies R, Grimmel LH, Mayer A, Leibfritz D  
Ammonia rhythm in *Microcystis firma* studied by *in vivo* <sup>15</sup>N and <sup>31</sup>P NMR spectroscopy 471  
Altenschmidt U, Fuchs G  
Anaerobic degradation of toluene in denitrifying *Pseudomonas* sp.: indication for toluene methylhydroxylation and benzoyl-CoA as central aromatic intermediate 152  
Amaral-Collaço MT → Roseiro CJ  
Aragno M → Beffa T  
Archer DB → Benstead J  
Atomi H → Oda K  
Avissar YJ → Majumdar D

Bagchi SN, Kleiner D  
Interrelationship between hydrogen peroxide, ammonia, glutamine, hydroxylamine and nitrite metabolism in the cyanobacterium *Phormidium uncinatum* 367  
Bak F → Ackersberg F  
Beale SI → Majumdar D  
Beffa T, Berczy M, Aragno M  
Cytochromes and hydrogen-oxidizing activity in the thermophilic hydrogen-oxidizing bacteria related to the genus *Hydrogenobacter* 497  
Benstead J, Archer DB, Lloyd D  
Formate utilization by members of the genus *Methanobacterium* 34  
Berczy M → Beffa T  
Beynen AC → Klaasen HLBM  
Bokranz M, Gutmann M, Körtner C, Kojro E, Fahrenholz F, Lauterbach F, Kröger A  
Cloning and nucleotide sequence of the structural genes encoding the formate dehydrogenase of *Wolinella succinogenes* 119  
Bothe H → Voßwinkel R  
Brauman A → Kane MD  
Breedveld MW, Zevenhuizen LPTM, Zehnder AJB  
Osmotically-regulated trehalose accumulation and cyclic β-(1,2)-glucan excretion by *Rhizobium leguminosarum* biovar *trifoli* TA-1 501  
Breitung J, Schmitz RA, Stetter KO, Thauer RK  
*N*<sup>5</sup>,*N*<sup>10</sup>-Methenyltetrahydromethanopterin cyclohydrolase from the extreme thermophile *Methanopyrus kandleri*: Increase of catalytic efficiency (*k*<sub>cat</sub>/*K*<sub>M</sub>) and thermostability in the presence of salts 517  
Breitung J → Rospert S  
Breznak JA, Switzer Blum J  
Mixotrophy in the termite gut acetogen, *Sporomusa termitida* 105  
Breznak JA → Kane MD  
Brzezinski R → Neugebauer E

Callies R → Altenburger R  
Campbell WL → Nawaz MS  
Cardy DLN, Laidler V, Salmon GPC, Murrell JC  
The methane monooxygenase gene cluster of *Methylosinus trichosporium*: cloning and sequencing of the *mmoC* gene 477  
Čáslavská J → Št'astná J  
Castenholz RW → Wahlund TM  
Cerniglia CE → Heitkamp MA  
Cerniglia CE → Nawaz MS  
Codd GA → Lanaras T  
Cohen S, Shilo M, Kessel M  
Nature of the salt dependence of the envelope of a Dead Sea archaeabacterium, *Halofexax volcanii* 198  
Colman B → Norman EG  
Cook CM → Lanaras T  
Cypionka H → Kroder M

Daniel G → Volc J  
Day DA → Udvardi MK  
Demain AL → Shoham Y  
Déry CV → Neugebauer E  
Diekert G → Ma K  
Diekert G → Reubelt U  
Diekert G → Traunecker J  
Dilworth MJ → Wong CM  
Dobson SJ, James SR, Franzmann PD, McMeekin TA  
A numerical taxonomic study of some pigmented bacteria isolated from Organic Lake, an antarctic hypersaline lake 56  
Dörner C, Schink B  
Fermentation of mandelate to benzoate and acetate by a homoacetogenic bacterium 302  
Dolfing J, Tiedje JM  
Acetate as a source of reducing equivalents in the reductive dechlorination of 2,5-dichlorobenzoate 356  
Drews G → Hornberger U  
Drift C van der → Alebeek G-JWM van  
Droffner ML, Yamamoto N  
Prolonged environmental stress via a two step process selects mutants of *Escherichia*, *Salmonella* and *Pseudomonas* that grow at 54°C 307  
DuBow MS → Guzzo A  
Duda VI → Kostrikina NA

Engel P, Trageser M, Unden G  
Reversible interconversion of the functional state of the gene regulator FNR from *Escherichia coli* *in vivo* by O<sub>2</sub> and iron availability 463  
Ensign JC → Št'astná J

Fahrenholz F → Bokranz M  
Falkowski PG → Ohki K  
Fischer P → Pieper DH  
Fitzmaurice WP, Roberts GP  
Artificial DNA-mediated genetic transformation of the photosynthetic nitrogen-fixing bacterium *Rhodospirillum rubrum* 142  
Fortnagel P → Schmidt V  
Franklin W → Nawaz MS  
Franzmann PD, Höpfel P, Weiss N, Tindall BJ  
Psychrotrophic, lactic acid-producing bacteria from anoxic waters in Ace Lake, Antarctica; *Carnobacterium funditum* sp. nov. and *Carnobacterium alterfunditum* sp. nov. 255  
Franzmann PD → Dobson SJ  
Freeman JP → Heitkamp MA  
Fricke H → Kurr M  
Friedrich M, Laderer U, Schink B  
Fermentative degradation of glycolic acid by defined syntrophic cocultures 398  
Friedrich M, Schink B  
Fermentative degradation of glyoxylate by a new strictly anaerobic bacterium 392  
Fuchs G → Altenschmidt U  
Fujita Y → Ohki K

Gabriel J → Volc J  
Galinski EA → Oren A  
Gamache B → Neugebauer E  
Gerjets D → Lorenz MG  
Girio FM → Roseiro CJ  
Glenn AR → Wong CM  
Goel U → Kauri T  
Göttfert M → Ramseier TM  
Grimmel LH → Altenburger R  
Gruber K, Sleytr UB  
Influence of an S-layer on surface properties of *Bacillus stearothermophilus* 181  
Guida L, Saidi Z, Hughes MN, Poole RK  
Aluminium toxicity and binding to *Escherichia coli* 507  
Gutmann M → Bokranz M  
Guzzo A, DuBow MS  
Construction of stable, single-copy luciferase gene fusions in *Escherichia coli* 444

Habata Y → Mizutani A  
Häder D-P → Zündorf I  
Harder W → Klei IJ van der  
Heinze TM → Nawaz MS  
Heitkamp MA, Freeman JP, Miller DW, Cerniglia CE  
Biodegradation of 1-nitropyrene 223  
Herrero E → Rico H  
Höpfel P → Franzmann PD  
Holler S, Pfennig N  
Fermentation products of the anaerobic ciliate *Trimyema compressum* in mono-xenic cultures 327  
Hornberger U, Wieseler B, Drews G  
Oxygen tension regulated expression of the *hemA* gene of *Rhodobacter capsulatus* 129

Huber R → Kurr M  
 Huber R → Rospert S  
 Hughes MN → Guida L  
 Huis in 't Veld JHJ → Teunissen MJ

Imhoff JF, Thiemann B  
 Influence of salt concentration and temperature on the fatty acid compositions of *Ectothiorhodospira* and other halophilic phototrophic purple bacteria 370

Imhoff JF → Thiemann B  
 Inaba H → Watanabe H  
 Israeli E → Shoham Y

James SR → Dobson SJ  
 Jannasch HW → Kurr M  
 Jareonkitmongkol S → Shimizu S  
 Jensen MT, Knudsen J, Olson JM  
 A novel aminoglycosphingolipid found in *Chlorobium limicola* f. *thiosulfatophilum* 6230 248

Jürgens UJ → Oelze J  
 Jürgens UJ → Schneider S  
 Jürgens UJ → Steinborn B

Kane MD, Brauman A, Breznak JA  
*Clostridium mayombei* sp. nov., an H<sub>2</sub>/CO<sub>2</sub> acetogenic bacterium from the gut of the African soil-feeding termite, *Cubitermes speciosus* 99

Kane MD, Breznak JA  
*Acetoneuma longum* gen. nov. sp. nov., an H<sub>2</sub>/CO<sub>2</sub> acetogenic bacterium from the termite, *Pterotermes occidentis* 91

Kaur S, Mishra P  
 Dimorphism-associated changes in plasma membrane H<sup>+</sup>-ATPase activity of *Candida albicans* 412

Kaur T, Ackermann HW, Goel U, Kushner DJ  
 A bacteriophage of a moderately halophilic bacterium 435

Kawashima H → Shimizu S  
 Kelly DP → Lanaras T  
 Kelly DP → Wood AP

Keltjens JT → Alebeek G-JWM van

Kessel M → Cohen S  
 Klaasen HLBM, Koopman JP, Van den Brink ME, Van Wezel HPN, Beynen AC  
 Mono-association of mice with non-cultivable, intestinal, segmented, filamentous bacteria 148

Klaassen C → Alebeek G-JWM van Klei IJ van der, Harder W, Veenhuis M  
 Methanol metabolism in a peroxisome-deficient mutant of *Hansenula polymorpha*: a physiological study 15

Kleiner D → Bagchi SN  
 Knackmuss H-J → Pieper DH  
 Knudsen J → Jensen MT  
 König H → Kurr M  
 Körtner C → Bokranz M  
 Kojro E → Bokranz M  
 Kondo J → Oda K  
 Koopman JP → Klaasen HLBM  
 Kostrikina NA, Zvyagintseva IS, Duda VI  
 Cytological peculiarities of some extremely halophilic soil archaeobacteria 344

Kristjansson JK → Kurr M  
 Kroder M, Kroneck PMH, Cypionka H  
 Determination of the transmembrane pro-

ton gradient in the anaerobic bacterium *Desulfovibrio desulfuricans* by <sup>31</sup>P nuclear magnetic resonance 145

Kröger A → Bokranz M  
 Kroneck PMH → Kroder M  
 Kroneck PMH → Schumacher W

Kubáčová E → Völkl J  
 Kucher MM → Sibirny AA  
 Kuhn AE → Pieper DH  
 Kurr M, Huber R, König H, Jannasch HW, Fricke H, Trincone A, Kristjansson JK, Stetter KO  
*Methanopyrus kandleri*, gen. and sp. nov. represents a novel group of hyperthermophilic methanogens, growing at 110°C 239

Kushner DJ → Kauri T  
 Kvapil P → Štastná J

Laderer U → Friedrich M  
 Laidler V → Cardy DLN  
 Lanaras T, Cook CM, Wood AP, Kelly DP, Codd GA  
 Purification of ribulose 1,5-bisphosphate carboxylase/oxygenase and of carboxysomes from *Thiobacillus thyasiris* the putative symbiont of *Thysiras flexuosa* (Montagu) 338

Lauterbach F → Bokranz M  
 Leibfritz D → Altenburger R  
 Linder D → Ma K  
 Linder D → Rospert S  
 Linder D → Schmitz RA  
 Lindner B → Masoud H  
 Lister DL → Udvardi MK  
 Lloyd D → Benstead J  
 Lorenz MG, Gerjets D, Wackernagel W  
 Release of transforming plasmid and chromosomal DNA from two cultured soil bacteria 319

Madigan MT → Wahlund TM  
 Majumdar D, Avissar YJ, Wyche JH, Beale SI  
 Structure and expression of the *Chlorobium vibrioforme hemA* gene 281

Ma K, Wohlforth G, Diekert G  
 Acetate formation from CO and CO<sub>2</sub> by cell extracts of *Peptostreptococcus productus* (strain Marburg) 75

Ma K, Zirngibl C, Linder D, Stetter KO, Thauer RK  
<sup>N5,N10</sup>-Methylenetetrahydromenopterin dehydrogenase (H<sub>2</sub>-forming) from the extreme thermophile *Methanopyrus kandleri* 43

Ma K → Rospert S  
 Masoud H, Neszmelyi A, Mayer H  
 Chemical characterization of the O-specific chain of *Sphaerotilus natans* ATCC 13338 lipopolysaccharide 176

Masoud H, Urbanik-Sypniewska T, Lindner B, Weckesser J, Mayer H  
 The structure of the lipid A component of *Sphaerotilus natans* 167

Mayer A → Altenburger R  
 Mayer H → Masoud H  
 McMeekin TA → Dobson SJ  
 Miller DW → Heitkamp MA  
 Miragall F → Rico H  
 Mishra P → Kauri T

Mizutani A, Habata Y, Yanagisawa K  
 Induction of cell fusion by a factor released by the cellular slime mold *Polysphondylium pallidum* 159

Murrell JC → Cardy DLN

Nawaz MS, Franklin W, Campbell WL, Heinze TM, Cerniglia CE  
 Metabolism of acrylonitrile by *Klebsiella pneumoniae* 231

Neidt I → Voßwinkel R  
 Neszmelyi A → Masoud H

Netrusov A, Pestova E  
 Oxidative phosphorylation in membrane vesicles of a gram-positive methylotroph 115

Neugebauer E, Gamache B, Déry CV, Brzezinski R  
 Chitinolytic properties of *Streptomyces lividans* 192

Norman EG, Colman B  
 Characterization of a malate dehydrogenase in the cyanobacterium *Coccochloris peniocystis* 28

Norton RS → Singh KK

Oda K, Atomi H, Ueda M, Kondo J, Teranishi Y, Tanaka A  
 High level expression of isocitrate lyase gene of n-alkane-utilizing yeast *Candida tropicalis* in *Saccharomyces cerevisiae* 439

Ölschläger T  
 A colicin M derivative containing the lipoprotein signal sequence is secreted and renders the colicin M target accessible from inside the cells 449

Oelze J, Jürgens UJ, Ventura S  
 Amino acid consumption by *Chloroflexus aurantiacus* in batch and continuous cultures 266

Oelze J → Steinborn B  
 Ohki K, Zehr JP, Falkowski PG, Fujita Y  
 Regulation of nitrogen-fixation by different nitrogen sources in the marine non-heterocystous cyanobacterium *Trichodesmium* sp. NIBB1067 335

Olson JM → Jensen MT  
 Op den Camp HJM → Teunissen MJ  
 Oren A, Simon G, Galinski EA  
 Intracellular salt and solute concentrations in *Ectothiorhodospira maris-mortui*: glycine betaine and N<sub>2</sub>-carbamoyl glutamineamide as osmotic solutes 350

Peteiro MA → Roseiro CJ  
 Pestova E → Netrušov A  
 Petruško VI → Sibirny AA  
 Pfennig N → Holler S  
 Pieper DH, Kuhn AE, Stadler-Fritzsche K, Fischer P, Knackmuss H-J  
 Metabolization of 3,5-dichlorocatechol by *Alcaligenes eutrophus* JMP 134 218

Poole RK → Guida L  
 Preuß A → Traunecker J

Ramsauer TM, Göttfert M  
 Codon usage and G+C content in *Bradyrhizobium japonicum* genes are not uniform 270

Reubelt U, Wohlfarth G, Schmid R, Diekert G  
Purification and characterization of ferredoxin from *Peptostreptococcus productus* (strain Marburg) 422

Rico H, Herrero E, Miragall F, Sentandreu R  
An electron microscopy study of wall expansion during *Candida albicans* yeast and mycelial growth using concanavalin A-ferreditin labelling of mannoproteins 111

Roberts GP → Fitzmaurice WP

Rosario CJ, Peito MA, Girio FM, Amaral-Collaço MT  
The effects of the oxygen transfer coefficient and substrate concentration on the xylose fermentation by *Debaryomyces hansenii* 484

Rospert S, Breitung J, Ma K, Schwörer B, Zirngibl C, Thauer RK, Linder D, Huber R, Stetter KO  
Methyl-coenzyme M reductase and other enzymes involved in methanogenesis from CO<sub>2</sub> and H<sub>2</sub> in the extreme thermophile *Methanopyrus kandleri* 49

Saidi Z → Guida L

Salmond GPC → Cardy DLN

Satoh T → Urata K

Schink B → Dörrner C

Schink B → Friedrich M

Schmid R → Reubelt U

Schmidt V, Wittich R-M, Fortnagel P  
Metabolism of 2-hydroxyphenylglyoxylate by *Moraxella* sp. strain VS1 213

Schmitz RA, Linder D, Stetter KO, Thauer RK  
*N<sup>5</sup>,N<sup>10</sup>*-Methylenetetrahydromenopterin reductase (coenzyme F<sub>420</sub>-dependent) and formylmethanofuran dehydrogenase from the hyperthermophile *Archaeoglobus fulgidus* 427

Schmitz RA → Breitung J

Schneider S, Jürgens UJ  
Cell wall and sheath constituents of the cyanobacterium *Gloeobacter violaceus* 312

Schumacher W, Kroneck PMH  
Dissimilatory hexaheme c nitrite reductase of "Spirillum" strain 5175: purification and properties 70

Schwörer B → Rospert S

Sedmera P → Volc J

Sentandreu R → Rico H

Sheehan SM, Switzer RL  
Intracellular serine protease-4, a new intracellular serine protease activity from *Bacillus subtilis* 186

Shilo M → Cohen S

Shimizu S, Jareonkitmongkol S, Kawashima H, Akimoto K, Yamada H  
Production of a novel ω1-eicosapentaenoic acid by *Mortierella alpina* 1S-4 grown on 1-hexadecene 163

Shoham Y, Israeli E, Sonensheim AL, Demain AL  
Inhibition of growth of *Bacillus subtilis* by recombinant plasmid pCED3 204

Sibirny AA, Titorenko VI, Teslyar GE, Petrushko VI, Kucher MM  
Methanol and ethanol utilization in methylotrophic yeast *Pichia pinus* wild-type and mutant strains 455

Simon G → Oren A

Singh KK, Norton RS  
Metabolic changes induced during adaptation of *Saccharomyces cerevisiae* to a water stress 38

Sleytr UB → Gruber K

Smits AAM → Teunissen MJ

Sonensheim AL → Shoham Y

Stadler-Fritzsche K → Pieper DH

Šťastná J, Kvapil P, Čáslavská J, Ensign JC  
Microcycle sporogenesis in some streptomycetes without shift down treatment 263

Steinborn B, Jürgens UJ, Oelze J  
Control of nitrogenase in chemostat cultures of *Rhodobacter capsulatus* grown on ammonium at different illuminations 135

Stetter KO → Breitung J

Stetter KO → Kurr M

Stetter KO → Ma K

Stetter KO → Rospert S

Stetter KO → Schmitz RA

Switzer Blum J → Breznak JA

Switzer RL → Sheehan SM

Tanaka A → Oda K

Teranishi Y → Oda K

Teslyar GE → Sibirny AA

Teunissen MJ, Smits AAM, Op den Camp HJM, Huis in 't Veld JJJ, Vogels GD  
Fermentation of cellulose and production of cellulolytic and xylanolytic enzymes by anaerobic fungi from ruminant and non-ruminant herbivores 290

Thauer RK → Breitung J

Thauer RK → Ma K

Thauer RK → Rospert S

Thauer RK → Schmitz RA

Thiemann B, Imhoff JF  
The effect of salt on the lipid composition of *Ectothiorhodospira* 376

Thiemann B → Imhoff JF

Tiedje JM → Doling J

Tindall BJ → Franzmann PD

Titorenko VI → Sibirny AA

Trageser M → Engel P

Traunecker J, Preuß A, Diekert G  
Isolation and characterization of a methyl chloride utilizing, strictly anaerobic bacterium 416

Trincone A → Kurr M

Udvardi MK, Lister DL, Day DA  
ATPase activity and anion transport across the peribacteroid membrane of isolated soybean symbiosomes 362

Ueda M → Oda K

Unden G → Engel P

Urata K, Satoh T  
Enzyme localization and orientation of the active site of dissimilatory nitrite reductase from *Bacillus firmus* 24

Urbanik-Sypniewska T → Masoud H

Van den Brink ME → Klaasen HLBM

Van Wezel HPN → Klaasen HLBM

Veenhuis M → Klei IJ van der

Ventura S → Oelze J

Vogels GD → Alebeek G-JWM van

Vogels GD → Teunissen MJ

Volc J, Kubáčová E, Sedmera P, Daniel G, Gabriel J  
Pyranose oxidase and pyranosone dehydratase: enzymes responsible for conversion of D-glucose to cortalcerone by the basidiomycete *Phanerochaete chrysosporium* 297

Voßwinkel R, Neidt I, Bothe H  
The production and utilization of nitric oxide by a new, denitrifying strain of *Pseudomonas aeruginosa* 62

Wackernagel W → Lorenz MG

Wahlund TM, Woese CR, Castenholz RW, Madigan MT  
A thermophilic green sulfur bacterium from New Zealand hot springs, *Chlorobium tepidum* sp. nov. 81

Watanabe H, Inaba H, Woodland Hastings J  
Effects of aldehyde and internal ions on bioluminescence expression of *Photobacterium phosphoreum* 1

Weckesser J → Masoud H

Weiss N → Franzmann PD

West TP  
Isolation and characterization of a dihydropyrimidine dehydrogenase mutant of *Pseudomonas chlororaphis* 513

Widdel F → Aeckersberg F

Wieseler B → Hornberger U

Wittich R-M → Schmidt V

Woese CR → Wahlund TM

Wohlfarth G → Ma K

Wohlfarth G → Reubelt U

Wong CM, Dilworth MJ, Glenn AR  
Evidence for two uptake systems in *Rhizobium leguminosarum* for hydroxy-aromatic compounds metabolized by the 3-oxoadipate pathway 385

Wood AP, Kelly DP  
Isolation and characterisation of *Thiobacillus halophilus* sp. nov., a sulphur-oxidising autotrophic eubacterium from a Western Australian hypersaline lake 277

Wood AP → Lanaras T

Woodland Hastings J → Watanabe H

Wyche JH → Majumdar D

Yamada H → Shimizu S

Yamamoto N → Drossner ML

Yanagisawa K → Mizutani A

Zehnder AJB → Breedveld MW

Zehr JP → Ohki K

Zevenhuizen LPTM → Breedveld MW

Zirngibl C → Ma K

Zirngibl C → Rospert S

Zündorf I, Häder D-P  
Biochemical and spectroscopic analysis of UV effects in the marine flagellate *Cryptomonas maculata* 405

Zvyagintseva IS → Kostrikina NA

*Indexed in Current Contents*